In the Drawing:

Please accept the following replacement drawing sheets showing changes in the figures overcome the objection to the drawing figures. Approval of the changes in the drawing figures and withdrawal of the object to the drawing is respectfully requested.

REMARKS

I. CLAIM CHANGES

The terminology for the spring has been changed in the amended claims, abstract and specification. No new matter has been entered by this change.

The term "coil spring" originally used in the specification is an incorrect description of the spring element, which is a leaf spring. This change in terminology is supported by the disclosure in both the specification and drawing. First, page 4 of the specification states that the spring may be made by UV depth lithography or comparable methods of structuring polymers in combination with multilayer micro-galvanic methods. These methods cannot be used to make a coil or spiral spring, but are methods for making a leaf spring or a flat spring. Second, the figures show a flat spring without coils or turns, which are characteristic of a spiral or coil spring. Thus the spring shown in the figures is a leaf spring.

In addition, changes were made in the broad description of the invention on page 3 of the specification to make the description clearer and less ambiguous. The changes are supported by the current detailed description in connection with the figures. The abstract has been similarly amended to make it clearer and features of the preferred MIGA leaf spring have been added.

The main circuit device claim 10 has been amended to change the term "coil spring" to leaf spring. Claims 11 and 12 have been amended to redistribute

the subject matter regarding the MIGA leaf spring on the basis of relative importance.

Independent claim 18 has been amended to delete the "new matter".

Dependent claims 16 and 17 have been amended to eliminate wording that resulted in formal rejections of their subject matter by making clear those elements of the device, which are parallel and perpendicular.

Dependent claims 19 to 21 have been amended to define the U-shaped spring in the same manner as described in the summary of the invention on page 3 of the applicants' specification. The U-shaped spring is made by bending a leaf spring into a U-shape but does not have the same thermal expansion compensation behavior as the leaf spring itself.

II. INDEFINITENESS REJECTION

Claim 17 was rejected under 35 U.S.C. 112, second paragraph, for indefiniteness.

According to page 3 of the Office Action it was unclear if the "coupling opening" was characterized as parallel to the conductor strip. It was applicants' intention to state that the surface 1b was parallel to the conductor surface, not the coupling opening. An appropriate change has been made in claim 17.

In view of the changes in claim 17 withdrawal of the rejection of claim 17 under 35 U.S.C. 112, second paragraph, is respectfully requested.

III. REJECTION UNDER 35 USC 112, first paragraph

Claims 18 to 23 were rejected under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement.

Page 3 of the Office Action indicated that no support is present in the specification for the last paragraph of claim 18. Thus the last paragraph of claim 18 was considered to be "new matter".

In response to this rejection the last paragraph of claim 18 has been canceled.

For the foregoing reasons and because of the changes in claim 18, withdrawal of the rejection of claims 18 to 23 under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement is respectfully requested.

IV. DRAWING OBJECTIONS

The drawings were objected to because the reference labels were not provided commensurate with the specification description.

Replacements sheets of drawings have been provided with this amendment to make appropriate changes to overcome this objection.

Because of the changes in the drawing figures withdrawal of the objection to the drawing figures is respectfully requested.

V. OBVIOUSNESS REJECTION

Claims 10 and 13 to 15 were rejected under 35 U.S.C. 103 (a) as obvious over Japanese (JP '002) in view of Maillet, et al (US '580).

A. The Subject Matter of the Cited Prior Art

The electric connection device of JP '002 is in a different environment than the claimed circuit device of the present invention because the contact element of applicant's claim 10 connects a conductor strip that is outside a wave guide with the wave guide, while in the case of JP '002 both the conductor strip and the stepping transformer 3b are entirely inside the wave guide 1. JP '002 discloses a connecting device that connects a conductor strip that is completely inside a wave guide 1 with a stepping transformer 3b that is also inside the wave guide.

The connecting device of JP '002 comprises a leaf spring 4 that is fixed at one end to the conductor strip 5 but bent so as to bear on a surface of the stepping transformer that is above the conductor strip (since the stepping transformer is attached to the side of the wave guide opposite to that on which the conductor strip is mounted). Thus the leaf spring 4 of JP '002 is pre-stressed to bear on the stepping transformer in a sliding contact, which provides the benefit that the connecting device of JP '002 is not stressed by mechanical forces or thermal stresses due to changing temperature. However to provide an

adequate electrical contact the surface of the stepping transformer on which the leaf spring bears must be favorably situated with respect to the fixed point on the conductor strip.

US '580 describes prior art electrical connection devices or links for connecting components that are entirely inside a wave guide and thus have special manufacturing problems. The prior art connecting device shown in fig. 2 comprises a bonding wire 20 or 23 fixed at one end to a conductor strip and at the other end to a stepping transformer within the waveguide. The connecting device shown in fig. 2 of US '580 is closest to that shown in the JP abstract. In the connecting device of the invention in US '580 (fig. 3 of US '580) a bonding wire or link 32 connects the components at respective points 33 and 34 by thermo-compression (the standard manufacturing technique) so that the wire or link is fixed at both ends and does not function like a spring. The link 20 or 23 is also fixed at both ends to the respective components by the same methods.

US '580 is particularly concerned regarding the difficulty of manufacturing this device because access is required from two directions 26, 27 (fig. 2) to complete the connection and the device must be entirely inside the wave guide (column 3, line 47 and following of US '580). To solve this manufacturing problem US '580 proposes to use the circuit device shown in fig. 3 in which the end surface of the stepping transformer and the conductor surface face in the same direction so that access from only one direction is required (claim 1, column 3).

B. Traversal Arguments

The 103 rejection of claim 10, as described in the final Office Action, is based on a proposed modification of US '580 according to the disclosures in JP '002. The proposed modification is to replace the fixed link 32 of US '580, which is fixed at each of its ends, with the leaf or coil spring of JP '002 to provide a sliding contact (page 5, lines 3 to 4 of the final Office Action). However if the fixed link 32 fixed at both ends by thermo-compression in the connection device of US '580 within the wave guide by a leaf spring that provides a sliding contact at one end, the prior art connection device shown in US '580 may be rendered unsatisfactory for its intended purpose or alternatively the basic principle of operation of the invention according to US '580 is changed. There is no teaching in either prior art reference that it would be correspondingly easy to manufacture this sort of link with a sliding contact by the thermo-compression or any other technique in US '580 or JP '002. Furthermore for ease of manufacture according to US '580 (claim 1) it is necessary that the stepping transformer or ridge must be mounted on the same side of the wave guide as the conductor strip with the bonded surfaces parallel and at about the same height from the surface of the wave guide. A reliable electrical contact between adjacent surfaces at about the same level, as in fig. 3 of US '580, would be difficult to provide with a leaf spring (how could it be bent to provide the appropriate pre-stressing?). In the case of the embodiments shown in figs. 1 to 4 of applicants' invention the contact point

on the wave guide is above that on the conductor strip so that pre-stressing can provide a reliable electrical contact, which is nevertheless a sliding contact.

In accordance with M.P.E.P. 2143.01 a rejection is not valid under 35 U.S.C. 103 (a) if a proposed modification modifies the basic principle of operation of the invention disclosed in the primary reference or if the modification renders the prior art invention in the primary invention unsatisfactory for its intended purpose. In this case the primary reference US '580 requires rigid or fixed attachments at the ends of the link or wire 32 for ease of manufacture and for a reliable electrical connection (the major purpose of the connecting structure of the invention in US '580), whereas the JP reference requires a sliding contact for different purposes (reduction of thermal stresses) in a different environment in which the components are a different oriented that would make a sliding contact of dubious reliability.

Thus it is respectfully submitted that the proposed modification of the subject matter of the primary reference, US '580, according to the disclosures in JP '002 is not in accordance with M.P.E.P. 2143.01. One skilled in the art would not combine these two prior art references in this manner without the applicants' specification as a guide, which is not permitted under 35 U.S.C. 103 (a).

Furthermore in JP '002 the contact element, the leaf spring 4, electrically connects elements that are entirely within or inside a wave guide. In contrast to the statement on page 4 of the Office Action the ridge 31 of US '580 is entirely within the wave guide (claim 1) and behind a window 38 of the waveguide

(column 3, lines 47 to 50) and the conductor strip 44 of the planar circuit 30 is entirely within a segment 37 of the same waveguide. Thus US '380 teaches that the components being connected by the link 32 are entirely within the same waveguide.

In contrast to the arrangement of the connected components in the circuit devices of the prior art, the conductor strip of claim 18 is outside of the waveguide. Thus the circuit devices of JP '002 and US '380 do not connect ground potentials of electrical components as does the circuit device of claim 18. Applicants' device connects the ground potentials of the conductor strip and the wave guide. Also for that reason the surfaces of the applicants' components that are connected with each other are oriented so that a bent leaf spring can be pre-stressed so as to provide a reliable sliding electrical contact.

This feature of claim 10 is also not suggested by either cited prior art reference, because both references teach a circuit device entirely inside a single wave guide.

Thus, the cited prior art references do not disclose or suggest important features of applicants' claimed circuit device according to amended claim 10. With respect to location and function of components in the device, neither reference discloses the feature that the conductor strip is outside of the wave guide and connects ground potentials of the components. Neither reference discloses that the contact element or link is a MIGA leaf spring of the stated dimensions.

For the foregoing reasons and because of the changes in the claims and specification withdrawal of the rejection of amended claims 10 and 13 to 15 as obvious under 35 U.S.C. 103 (a) over Japanese ('002) in view of Maillet, et al, is respectfully requested.

Furthermore with respect to the dependent claims 11 and 12 neither JP '002 nor US '580 disclose or suggest a MIGA leaf spring of the dimensions claimed in the amended claim 12.

Thus because dependent claims 11, 12, 16 and 17 depend on claim 10, it is respectfully submitted that they should not be rejected as obvious under 35 U.S.C. 103 (a) over Japanese ('002) in view of Maillet, et al.

VI. CLAIMS 18 TO 23

It is respectfully submitted that amended claims 18 to 23 should not be rejected as obvious under 35 U.S.C. 103 (a) over Japanese (JP '002) in view of Maillet, et al (US '580).

Claim 18 was not rejected based on the prior art. Furthermore, the U-shaped spring shown in applicants' fig. 5 is not the same as a leaf spring as far as thermal expansion compensation goes as shown in figs. 1 to 4; it is formed by bending a leaf spring into a U-shape.

Japanese '002 discloses a contact element 4 connecting a conductor strip 5 mounted on a dielectric substrate 6 and a stepping transformer 3b. JP '002 discloses that the contact element 4 is a leaf spring, which has one end fixed to

the top of the conductor strip 5 and the other end bent to contact the stepping transformer 3b. This other end is in a sliding contact with the stepping transformer and because of that this prior art electrical circuit device does not undergo stress because of a drawing force applied to the conductor strip or because of thermal expansion effects due to temperature change.

JP '002 itself does not disclose or suggest applicants' claimed circuit device of claim 18, which also compensates for thermal expansion and applied forces. According to claim 18 this device comprises a pre-fabricated U-shaped spring acting as the contact element. One contacting area of the spring is glued or fixed with an electrically conductive adhesive to the conductor strip. The other contacting area comprises an electrically conducting adhesive. Thus the U-shaped spring is fixed with conducting adhesive at respective contacting areas to corresponding locations on the conductor strip and the wave guide.

Since the U-shaped spring does not have a sliding contact with either the conductor strip or the wave guide, it provides the thermal expansion compensation and resistance to mechanical stress by means of its spring flexibility and U-shape. This an entirely different solution to the problem of providing thermal expansion and resistance to mechanical stresses than that provided by the sliding contact of JP '002. Thus JP '002 clearly does not anticipate claims 18 to 23.

US '580 describes prior art electrical connection devices for connecting components that are entirely within a wave guide and thus have special manufacturing problems. The prior art connecting device shown in fig. 2

comprises a bonding wire 20, 23 fixed at one end to a conductor strip and at the other end to a stepping transformer within the wave guide and connected to the other side of the wave guide from the conductor strip. For ease of manufacture US '580 discloses a connecting device that comprises a bonding wire or link 32 to points 33 and 34 on respective internal components by thermo-compression (the standard manufacturing technique) so that the link 32 is fixed at both ends and does not function like a spring.

US '580 is particularly concerned regarding the difficulty of manufacturing this device because access is required from two directions 26, 27 in the case of the prior art embodiment of fig. 2 to complete the connection and the device must be entirely inside the wave guide. To solve this manufacturing problem the reference teaches the circuit device shown in fig. 3 in which the end surface of the stepping transformer and the conductor surface face in the same direction and are at about the same height from the wave guide mounting surface, so that access from only one direction is required (claim 1, column 3).

US '580 is silent regarding the problems associated with thermal expansion or mechanical stresses placed on the connection by forces acting on the conductor strip or its substrate. Regarding the nature of the contact element, i.e. "link" 32 in figure 3 or conductive link 20 of fig. 2, in relation to the problem that applicants are trying to solve, US '580 teaches nothing more than the prior art of applicants' background section on page 2 of applicants' US specification. US '580 teaches a fixed link, such as a band or wire, attached at respective ends

to corresponding locations on the conductive strip and the stepping transformer or ridge 31.

US '580 does not disclose or suggest any special types of "link" that will help compensate for thermal expansion. For example, US '580 does not disclose a sliding contact as in JP '002. Also US '580 does not disclose or suggest that the link is a conductive spring of any kind. Particular US '580 does not suggest that the link should be a U-shaped spring as claimed in applicants' claim 18.

Thus it is respectfully submitted that US '580 does not suggest the modifications of the primary prior art reference that are necessary to arrive at the invention claimed in applicants' amended claim 18.

It is well established by many U. S. Court decisions that to reject a claimed invention under 35 U.S.C. 103 there must be some hint or suggestion in the prior art of the modifications of the disclosure in a prior art reference or references used to reject the claimed invention, which are necessary to arrive at the claimed invention. For example, the Court of Appeals for the Federal Circuit has said:

> "Rather, to establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant...Even when obviousness is based on as single reference there must be a showing of a suggestion of motivation to modify the teachings of that reference.." ***In re Kotzab***, 55 U.S.P.Q. 2nd 1313 (Fed. Cir. 2000). See also M.P.E.P. 2141

A U-shaped spring is more flexible than the leaf spring shown in figs. 1 to 4 of this application and therefore the link in which a U-shaped spring is used can

sustain a higher mechanical load. U.S. '580 does not suggest replacing the sliding contact element of JP '002 with a U-shaped spring.

Furthermore in JP '002 the contact element, the leaf spring 4, electrically connects components that are entirely within or inside a wave guide. In contrast to the statement on page 4 of the Office Action the ridge 31 of US '580 is entirely within the wave guide (claim 1) and behind a window 38 of the waveguide (column 3, lines 47 to 50) and that the conductor strip 44 of the planar circuit 30 is entirely within a segment 37 of the same waveguide. Thus US '380 teaches that the components being connected by the link 32 are entirely within the same waveguide.

In contrast to the arrangement of the connected components in the circuit devices of the prior art, the conductor strip of claim 18 is outside of the waveguide. Thus the circuit devices of JP '002 and US '380 do not connect ground potentials of electrical components as does the circuit device of claim 18. Applicants' device connects the ground potentials of the conductor strip and the wave guide.

This feature of claim 18 is also not suggested by either cited prior art reference because both references teach a circuit device entirely inside a single wave guide.

For the foregoing reasons and because of the changes in the wording of claim 18, it is respectfully submitted that claims 18 to 23 should not be rejected as obvious over either Japanese '002, or Maillet, et al, alone, or a combination of these references.

Should the Examiner require or consider it advisable that the specification, claims and/or drawing be further amended or corrected in formal respects to put this case in condition for final allowance, then it is requested that such amendments or corrections be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing the case to allowance, he or she is invited to telephone the undersigned at 1-631-549 4700.

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,

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